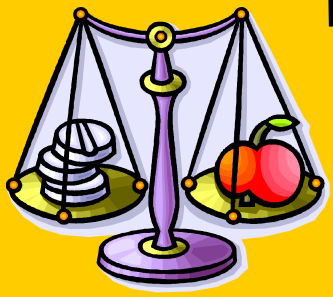
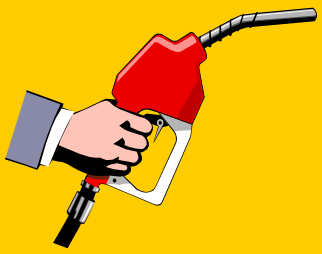
Weights and Measures

A practical guide





Presented by

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Franklin County Auditor

Sealer of Weights and Measures

Weights and Measures

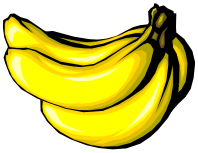
Weights and Measures plays a vital role in our everyday lives. Our economy is based on the monetary value placed on goods and services bought, sold and traded each day. That monetary value is ultimately determined by an accurate system of weights and measures.

All 88 Ohio counties have established Weights and Measures programs included in the responsibilities of the County Auditor's Office. In Franklin County, the Auditor's Office is responsible for Weights and Measures activities in all areas, except the city limits of the City of Columbus.

In Ohio, the Director of Agriculture is the State Sealer of Weights and Measures. The State Weights and Measures Laboratory is located in Reynoldsburg. The laboratory provides testing and calibration services for local weights and measures jurisdictions, government agencies, industry, education and research.

While local jurisdictions are responsible for testing and inspecting all commercial weighing and measuring devices such as scales, gasoline pumps, taxi meters, etc., the State of Ohio provides assistance in the testing and inspection of vehicle and livestock scales, fuel meters and packaged consumer goods.

The delicate system of weights and measures keeps us all in balance, protecting us in all phases of the economy. From the purveyor of raw materials to the manufacturer, and from the distributor and retailer to the consumer, accurate weights and measures carefully regulate each link on our complex economic chain. Everyone should do their share to be informed consumers and work to maintain and support an accurate system of Weights and Measures.



Getting What You Pay For

It's hard to be a smart consumer today. You think about the products you buy and the amount you can spend. Can I afford this? Is this the best buy? Am I getting my money's worth?

Almost everything we buy is sold by weight, volume, length, count, or measure. Think of examples -- a dozen eggs, a gallon of milk, a liter of pop, a yard of fabric, a pound of hamburger, a cord of firewood.

Without standard measurements, it would be difficult to do even simple things, like using cookbooks, buying carpeting, laundry detergent or fabric.

Keeping the Market in Balance

You don't carry a scale or measuring tape with you to check the weight or measure of everything you buy. How do you know you're getting what you pay for?

For years, your Franklin County Auditor's Weights and Measures Inspectors have been working behind the scenes to protect consumers, businesses and manufacturers from unfair practices.

These inspectors use highly accurate equipment to inspect scales, meters, scanning equipment and packaged products at supermarkets, packing plants, feed mills, shipping companies, lumber yards and gasoline stations.

They act as a third party to help maintain fairness and keep the market in balance.

Know Your Rights and Responsibilities

Consumers have rights and responsibilities in the marketplace! By following the guidelines contained in this booklet, you can help the market work its best.

READ THE LABEL! Package labels give consumers helpful information. The amount of the product or the net quantity in the package is marked on the label. The quality is shown as a weight, measure, or count, such as ounces, pounds, quarts, liters, or square feet.

Pay Only for the Product, Not the Packaging

When you buy apples in a plastic bag, you should only pay for the weight of the apples. If you buy potato salad at the deli counter, you should pay only for the salad, not for the weight of the container.

In many stores, the electronic or computerized scales used at the check-out counter are set to automatically deduct the weight of the packaging. On other scales, the sales clerk must adjust the scale to deduct the packaging materials.

Scales must be placed so you can see the weight. If you have a question, ask to have the package weighed again before you buy. Ask if the weight of the packaging has been deducted.

Weights and Measures inspectors from the Franklin County Auditor's Office often visit stores to inspect and weight prepackaged products. They also check the accuracy of the scales being used.

What You Can Do

Watch the scale and the amount registered. The scale should be placed so you can see the weight, price and other information displayed.

Make sure the scale shows a ZERO or minus sign before anything is weighed.

If you have questions about how a store weighs or measures products, ask the manager for information.

Compare Products and Prices

Food is a large part of the family budget. To make the best choices and to get the most for your money, it is important to compare the price, amount and quality of similar products.

Unit pricing can help. The unit price tells you the costs per "unit" (such as per ounce, per pound, per sheet, etc.) to buy the product.

It's easy to find the unit price of some items. It may be marked on a sign near the item. For example:

If apples sell for 89 cents per pound, you know that five pounds will cost $4.45 (5 pounds X 89 cents)

If potato salad sells at the deli counter for $2.59 per pound, you know that two pounds will cost $5.18 (2 pounds X $2.59)

When you know the unit price, you can compare similar products of different sizes.

What You Can Do

Look for unit price labels on shelves or signs near the item.

Compare the unit prices of similar products to find the best buy.

If the unit price is incorrect, notify the store manager.

Check the Price

Many stores use electronic scanners to figure the price at the check-out counter. These scanners are linked to a computer that reads the price of the item. Some scanners are hand-held and the clerk runs the scanner over the price tag. Other scanners are on a counter and the items are passed over an electronic reading device.

The scanner reads the code on the product or the tag and the computer computes the price.

Inspectors from the Franklin County Auditor's Office inspect scanners to make sure you are charged the correct price. If the scanners are inaccurate, consumers and businesses can lose money.

What You Can Do

Watch as the price of the item shows on the check-out register.

Ask the clerk to verify the price if you think the scanned price is incorrect.

If the scanned price does not agree with the posted price, ask the store manager to correct it.

Save the cash register receipt in case you have a problem later on.

At the Gas Pump

Good measurement is also important when you buy gasoline or motor fuel. These fuels are sold in gallons, and the price you pay depends upon the octane level and the amount of fuel you buy. A computer in the gas pump calculates what you owe based on the amount and the unit price of the gasoline. When comparing prices, be sure to compare gasoline with the same octane rating. Compare the price of a gallon of gasoline at one station to the price of a gallon of the same octane at another station.

The Franklin County Auditor's Office checks gasoline pumps each year for accuracy. Inspectors are also testing octane levels at local pumps to gather data for possible legislation that would require fuel quality testing in Ohio.

What You Can Do

Be sure you are using the correct pump. The octane rating and the price per gallon should be clearly marked on each pump.

Be sure the pump is set to zero before any gasoline is pumped.

Check the price by multiplying the number of gallons by the unit price. Compare this to the total due.

If using a credit card, check your receipt to be sure the amount billed is the amount on the pump. Take your card and any carbon paper from the credit slip.

Heating Fuel and Firewood

Home heating fuel and propane are also sold by volume or weight. When these products are delivered to your home, the seller must give you a delivery ticket that shows the name and address of the buyer and the seller, the delivery date, the amount and type of fuel delivered. The unit price of the fuel should also be on the ticket, unless you have a special arrangement with the seller.

Firewood is sold by a measurement called a “cord.” A cord is 128 cubic feet of firewood. To be sure you have a cord, you can stack and measure the wood. For example, a cord of firewood, when stacked, could measure 4 feet wide, 4 feet high and 8 feet long (4 X 4 X 8 =128).

A seller may not use terms such as “truckload,” face cord,” “rack,” or “pile.”

What You Can Do

When you buy firewood, ask the seller to stack the wood (you may have to pay extra for this service) or stack the wood yourself.

Get a receipt which shows the seller’s name, address and phone number, along with the price, amount and type of wood purchased. Write down the license number of the delivery vehicle.

Measure the wood before using any.

Take a picture of the stack if you think there is less than a cord.

If you feel you have a problem, contact the seller before burning any wood.

Weights and Measures is Everyone's Business

Inspectors from the Franklin County Auditor's Office and jurisdictions across the country are working behind the scenes to protect you.

Consumers and businesses benefit and can help their local inspectors enforce the law and help to keep a fair marketplace.

Look for the Weights and Measures seal for assurances that the weighing or measuring device has been tested and certified. If you do not see one, ask the store manager or contact the Auditor's Office.

Franklin County Auditor's Office

Weights and Measures
373 S. High Street, 21st Floor
Columbus, OH 43215

614-462-7380

or visit us online at
www.co.franklin.oh.us/auditor

LINEAR MEASURE

12 inches ..... 1 foot
4 inches ..... .333 (4/12) foot; 1 hand
3 feet ..... 1 yard
5.5 yards .....16.5 feet; 1 rod, pole or perch
40 poles ..... 220 yards; 1 furlong
8 furlongs ..... 1,760 yards; 5,280 feet; 1 mile
3 miles ..... 1 league
69,125 miles ..... 1 degree
320 rods ..... 1 mile

VOLUMETRIC MEASURE

Cubic Measure

1,728 cubic inches ..... 1 cubic foot
27 cubic feet ..... 1 cubic yard
1 cord of wood ..... 128 cubic feet
1 board foot (144 cubic inches) ..... .0833 cubic feet

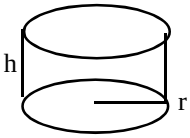
Liquid Measure

4 fluid ounces ..... 1 gill
2 gills ..... 1 cup
2 cups ..... 1 pint
2 pints ..... 1 quart
4 quarts ..... 1 gallon
31.5 gallons ..... 1 barrel

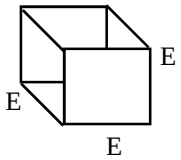
Dry Measure

2 pints ..... 1 quart
8 quarts ..... 1 peck
4 pecks ..... 1 bushel

CALCULATING VOLUME



Cylinder
The volume of a cylinder is found by multiplying the area of its base by its height.



Cube
The volume of a cube is found by multiplying the length by width by height.

Oblong
The volume of an oblong is found by multiplying the length by width by height.

Square or Area Measure

144 square inches ..... 1 square foot

9 square feet ..... 1 square yard

30.25 square yards ..... 1 square rod, pole or perch

160 square rods ..... 1 acre

640 acres ..... 1 square mile,
or 1 “section” of U.S. Government surveyed land

Sports Standards

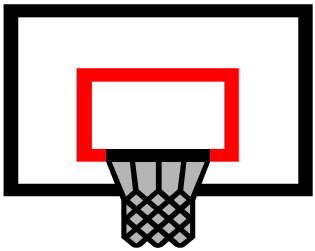
BASEBALL

Home plate to pitchers's box:	60 ft. 6 in.
Plate to second base:	127 ft. 3 3/8 in.
Distance from base to base: (home plate included)	90 ft.
Batter's box:	6 ft. by 4 ft.
Weight of ball:	Not less than 5 oz. Not more than 5 1/4 oz.

Bat: Must be round and made of hardwood in one piece or laminated. The diameter will not exceed 2 3/4 inches at its thickest part, and length will not exceed 42 inches.

FOOTBALL

Length of field:	120 yards (including 10 yards of end zone on each end.
Width of field:	160 ft. (53 1/3 yards)
Height of goal posts:	20 ft.
Height of crossbar:	10 ft.
Width of goal posts:	
(inside to inside)	18 ft. 6 in.
(outside to outside)	no more than 19 ft. 2 in.



BASKETBALL

Playing court:	94 ft. long by 50 ft. wide (max. size) 74 ft. long by 42 ft. wide (min. size)
Baskets:	Rings 18 inches in inside diameter, with white cord nets measuring 15 to 18 inches in length. Each ring is made of metal and is not more than 5/8 of an inch in diameter.
Basket ring height:	10 ft.
Free-throw line:	15 ft. from face of the backboard.

TENNIS

Size of court:	Rectangle 78 ft. long and 27 ft. wide (singles) Rectangle 78 ft. long and 36 ft. wide (doubles)
Service line:	21 ft. from net.
Height of net:	3 ft. in center, gradually rising to reach 3 ft. 6 in. posts on each side of court.

KITCHEN MEASUREMENTS

STANDARD	EQUIVALENT
One pinch or dash	1/16 tsp.
3 teaspoons	1 tbl.; 1/2 oz. liquid
4 tablespoons	1/4 cup; 2 oz. liquid
1/3 cup	5 tbls. plus 1 tsp.
1/2 cup	8 tbls.; 4 oz. liquid
1 gill	1/2 cup; 4 oz. liquid
1 cup	2 gills; 16 tbls; 8 oz. liquid
2 cups	1 pint; 16 oz. liquid
2 pints	1 quart; 32 oz. liquid
4 quarts	1 gallon
8 quarts	1 peck
4 pecks	1 bushel
31 1/2 gallons	1 barrel
16 oz.	1 pound -- dry measure
1 pound of butter	2 cups

Note: All measurements quoted are level.

Thermometers: Comparative Scales

CENTIGRADE	**FAHRENHEIT**	
100°	212°	Water boils at sea level
75°	167°	Alcohol boils
52.8°	127°	Tallow melts
36.7°	98°	Blood temperature
0°	32°	Water freezes
- 40°	- 40°	Scales reach equilibrium

Contact the Auditor's Office

Weights and Measures	**614-462-7380**
Dog Licenses	**614-462-3260**
Homestead Exemption	**614-462-3240**
Real Estate Division	**614-462-4663**
Valuation	
Board of Revision	
Special Assessments	
Public Information/Map Room	
Appraisal	
Geographic Info. System	**614-462-7272**
Personal Property Tax	**614-462-3230**
Fiscal Services	**614-462-3357**

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